

Clean Version of Pending Claims

- 1            1.    A cross-linking compound which comprises:
- 2                    (a)    an anhyccrous compound liquid at ambient temperature;
- 3                    (b)    having at least one element chosen from Group VI-A elements of the periodic
- 4                    table of elements; and
- 5                    (c)    a natural or synthetic polymer.
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- 1            2.    A cross-linking compound as set forth in Claim 1 wherein said Group VI-A element
- 2                    is sulfur.

- 1            3.    A cross-linking compound as set forth in Claim 1 wherein said polymer is a multi-
- 2                    component polymer.

- 1            4.    A cross-linking compound as set forth in Claim 1 wherein said polymer is saturated.

- 1            5.    A cross-linking compound as set forth in Claim 1 wherein said polymer contains
- 2                    functional groups.

- 1            6.    A cross-linking compound as set forth in Claim 1 wherein said polymer is hydroxy
- 2                    terminated polybutadiene.

- 1            7.    A cross-linking compound as set forth in Claim 1 wherein said polymer contains two
- 2                    or more chemical moieties.

1            8.        A cross-linking compound as set forth in Claim 7 wherein said polymer is a  
2 copolymer of butylene and butene.

1            9.        A cross-linking compound as set forth in Claim 1 including aldehyde, phenol, phenol-  
2 aldehyde, melamine or epoxy resins.

1            10.        A cross-linking compound as set forth in Claim 9 wherein said epoxy resins contains  
2 glycidyl moieties.

1            11.        A cross-linking ~~compound~~ as set forth in Claim 1 wherein said polymer has a  
2 molecular weight less than about 70,000.

1            12.        A cross-linking compound which comprises:  
2            (a)        an anhydrous compound liquid at ambient temperature;  
3            (b)        molecules of chemical moieties having two or more Group VI-A elements of  
4 the periodic table of elements; and  
5            (c)        a natural or synthetic polymer.

1            13.        A cross-linking compound as set forth in Claim 12 wherein said polymer is a multi-  
2 component polymer.

1            14.        A cross-linking compound as set forth in Claim 12 wherein said polymer is saturated.

1           15.     A cross-linking compound as set forth in Claim 12 wherein said polymer contains  
2 functional groups.

1           16.     A cross-linking compound as set forth in Claim 15 wherein said polymer is hydroxy  
2 terminated polybutadiene.

1           17.     A cross-linking compound as set forth in Claim 12 wherein said polymer contains two  
2 or more chemical moieties.

1           18.     A cross-linking compound as set forth in Claim 17 wherein said polymer is a  
2 copolymer of butylene and butene.

1           19.     A cross-linking compound as set forth in Claim 12 wherein said Group VI-A  
2 elements of the periodic table of elements are in terminal positions on the molecules or chemical  
3 moieties.

1           20.     A cross-linking compound as set forth in Claim 19 wherein at least one of said Group  
2 VI-A elements of the periodic table of elements is sulfur.

1           21.     A cross-linking compound as set forth in Claim 20 wherein the molecules or chemical  
2 moieties are mercaptans.

1           22.    A cross-linking compound as set forth in Claim 12 wherein said Group VI-A  
2 elements of the periodic table of elements are not in the terminal position of the molecules or  
3 chemical moieties.

1           23.    A cross-linking compound as set forth in Claim 22 wherein said Group VI-A  
2 elements of the periodic table of elements are poly-element moieties within the molecules or  
3 chemical moieties.

1           24.    A cross-linking compound as set forth in Claim 23 wherein at least one of said Group  
2 VI-A elements is sulfur.

1           25.    A cross-linking compound as set forth in Claim 23 wherein the molecules or chemical  
2 moieties are Di-tert-butyl polysulfide, Di-tert-dodecyl polysulfide, Di-tert-nonyl polysulfide or  
3 combinations thereof.

1           26.    A cross-linking compound as set forth in Claim 23 wherein the poly-element moiety  
2 is poly-sulfide.

1           27.    A cross-linking compound as set forth in Claim 23 including additional cross-linking  
2 agents of aldehydes, phenols, phenol-aldehydes, melamine resins or epoxy resins.

1           28.    A cross-linking compound as set forth in Claim 23 wherein said epoxy resin contains  
2 glycidyl moieties.

29. A cross-linking compound as set forth in Claim 28 wherein the glycidyl moiety is neodecanoic acid, oxiranylmethyl ester.

30. A cross-linking compound as set forth in Claim 1 including vulcanization accelerators or co-reactant.

31. A cross-linking compound as set forth in Claim 30 wherein the accelerator or co-reactant is Tetramethyl Thiuram Disulfide.

32. A cross-linking compound as set forth in Claim 30 wherein the accelerator or co-reactant is Tetrabutylthiuram Disulfide.

33. A cross-linking compound as set forth in Claim 30 wherein the accelerator or co-reactant is a room temperature accelerator or co-reactant.

34. A cross-linking compound as set forth in Claim 30 wherein the accelerator or co-reactant is Dimethyl Cyclohexyl Ammonium Dibutyl Dithiocarbamate.

35. A cross-linking compound as set forth in Claim 1 including organic oils or solvents.

36. A cross-linking compound as set forth in Claim 35 wherein the organic oils or solvents are derived as a result of components fractionated from crude oil processing.

1 37. A cross-linking compound as set forth in Claim 36 wherein the fractionated  
2 components are process oils.

1 38. A cross-linking compound as set forth in Claim 37 wherein the process oils are either  
2 aromatic, naphthenic or paraffinic or combinations thereof.

1 39. A cross-linking compound as set forth in Claim 35 wherein the organic oils or  
2 solvents are derived from natural oils.

1 40. A cross-linking compound as set forth in Claim 39 wherein the natural oils are of  
2 either animal or vegetable origin.

1 41. A cross-linking compound as set forth in Claim 39 wherein the oil is of vegetable  
2 origin.

1 42. A cross-linking compound as set forth in Claim 35 wherein the organic oils or  
2 solvents contain elements of Group V-A of the periodic table of elements.

1 43. A cross-linking compound as set forth in Claim 42 wherein the Group V-A elements  
2 contained in said oils or solvents is either phosphorous or nitrogen or both.

1 44. A cross-linking compound as set forth in Claim 43 wherein said oils or solvents  
2 containing both phosphorous and nitrogen is lecithin.

1            45.    A cross-linking compound as set forth in Claim 1 which includes chemical moieties  
2    capable of forming an oxidation-reduction reaction.

1            46.    A cross-linking compound as set forth in Claim 45 wherein the chemical moieties  
2    capable of forming a oxidation-reduction reaction are iron sulfate and iron chloride.